

Declaration of Charles R. Baugh, Ph.D.

I, Charles R. Baugh, Ph.D., do hereby declare and state as follows:

- My career and technical qualifications are accurately reflected in **Attachment-A** to this declaration, which should be referred to for details of my experience. Some of my relevant accomplishments are as follows:
- I received a Ph.D. in Computer Science from University of Illinois in 1970 after receiving an M.S. degree in Electrical Engineering from University of Illinois in 1967. I received a B.S. in Electrical Engineering, with Highest Honors from Michigan State University in 1965.
- I have received at least fifteen U.S. Patents and have published at least twenty three technical papers.
- I was named an IEEE Fellow in 1993.
- I have been an expert witness in at least twelve patent and technology related law suits.
- During my career at Racal-Milgo, Inc., I was actively involved in research and development of technology relating to encryption and key management for products used extensively in the banking industry as well as other industries requiring secure data communications.
- During my career with Boeing I was actively involved in research and development in secure radio communications and secure data communications systems for US government applications. As such, I am quite comfortable technically in analysis of patents and technical documents relating to public and private key encryption systems as well as key management for encryption systems.
- In my consulting business clients engaged me to participate in wireless standards development to insure wireless customers were authenticated to verify the customer using the wireless service is in fact valid customer. Validation of customers each time a wireless customer requests service from a service provider incorporates the use of encryption technology.
- In my consulting business several clients hired me to participate in wireless standards development to insure the content of the information transmitted over the wireless

telecommunication system is secure from "wire tapping." Encryption techniques provide the protection of the data from unauthorized parties.

- I have participated in both mobile and fixed wireless standards bodies in which multiple versions of standards have been incorporated in commercially available service to the general public. These standards include both authentication of valid customers and encryption of the users' information.
- I have known Mr. Jerry Miller of Miller Patent Services since we were both employed at Racal Milgo, approximately since 1982.
- I have never worked for Sony Corporation or Sony Electronics Inc., except on one occasion as a consultant several years ago in doing an expert analysis of a patent relating to a Selective Encryption.
- I am being compensated for my time in reviewing U.S. Patent Publication 2002/0108035 to Herley et al. (hereinafter Herley) and preparation of this document without regard for the answers to the questions posed to me.
- I believe myself to be highly competent in the field of encryption technology and in the field of selective encryption of video content.
- I have not been informed by Mr. Miller or anyone else which patent application this declaration relates to and I have not read any office action relating to such patent application.
- I have been asked by Mr. Miller to provide a response to question #1: Is content where one duplicated portion is encrypted under a first encryption system and another duplicated portion is encrypted under a second encryption system, more cryptographically secure than an arrangement wherein a single one of the encrypted copies (one of the duplicates) is supplied?
- The answer to question #1 is no. At best, the content is no more secure, but content supplied in multiple duplicate copies where each duplicate copy is individually encrypted with a different encryption system may in fact be less secure in many scenarios. I know of no way that one could enhance the cryptographic security of content by supplying multiple copies of the content with each copy individually encrypted with a different encryption system. This is true because the set of encrypted copies can be no more secure than the copy encrypted by the weakest of the encryption systems.

- I have been asked by Mr. Miller to review U.S. patent application publication number 2002/0108035 to Herley et al. (hereinafter Herley).
- I have done so and I am very confident that I fully understand this reference. I have further been asked by Mr. Miller to answer question #2: Does any of the teachings of Herley contradict your answer to question #1.
- I have studied the Herley reference and my reply is no.
- I have also been asked by Mr. Miller to answer question #3: Does the Herley reference disclose at any or all of Figures 2-5, the Abstract, page 1, paragraphs [0010-0013] or [0020-0031] a method or apparatus for partial encryption of content where the same portion of the content is encrypted two or more times?
- I have studied these portions of the Herley reference and find no such disclosure. There is no discussion of a single portion of the content being encrypted two or more times. There is also no discussion of a portion of the content being duplicated two or more times and then each individual copy encrypted exactly ONCE.
- I have been further asked by Mr. Miller to review the Herley reference in its entirety and determine (question #4): Does the Herley reference at any point in the reference teach or even suggest that the same portion of the content be encrypted two or more times?
- I have again reviewed the entirety of the Herley reference and find no such disclosure and not even a suggestion of such a disclosure. Rather, the original content file is subdivided into two or more mutually exclusive (non-duplicated) pieces where some of the pieces are encrypted ONCE and some pieces are NOT encrypted at all.
- I have been further asked by Mr. Miller to review the Herley reference in its entirety and determine (question #5): Does the Herley reference at any point in the reference teach or even suggest duplication of, any reason for duplication of, portions of the content for selective encryption?
- I have reviewed the entirety of the Herley reference and find no such disclosure and not even a suggestion of such a disclosure.
- I have also been asked by Mr. Miller to review the Herley reference in its entirety and determine (question #6): Does the Herley reference at any point in the reference teach or even suggest duplication of portions of the content for any reason?

- I have reviewed the entirety of the Herley reference and find no such disclosure and not even a suggestion of such a disclosure.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signed: _____/Charles R. Baugh/_____

Charles R. Baugh, Ph.D.

Dated: _____ March 9, 2010 _____

ATTACHMENT A

C. R. (Rick) BAUGH, Ph.D.

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CAREER SUMMARY

Product commercialization, product design, product architecture, and product specification across a broad range of telecommunications technologies

EXECUTIVE SUMMARY

- Broad base of business focused product development accomplishments and a breadth of expertise in essential technologies necessary for product commercialization.
- Expert witness experience in testifying a jury trials, writing expert reports, analyzing complex patents
- Proven track record in engineering management, business planning, consulting, and organization development in technology intensive organizations. Demonstrated abilities to:
 - Testify as an Expert Witness
 - Coordinate Industry Standards
 - Define Product Specifications
 - Innovate New Products
 - Recruit Staff
 - Lead Joint Eng/Mktg Teams
 - Set Strategic Technology Direction
 - Transfer Technology to Staff
 - Direct Regulatory Affairs
 - Stimulate Invention
 - Integrate New Technology
 - Lead Joint Technology Alliances
 - Direct Technology Mgmt
 - Evaluate Acquisitions
- Industrial leadership roles in major engineering college boards and advisory committees.

TECHNICAL SUMMARY

- Technical achievements recognized through products, patents, publications, and professional society awards, including:
 - Intelligent Network (IN, AIN, WIN)
 - Personal Communications (PCS)
 - SS7 Features and Services
 - Broadband Local Access
 - Subscriber Carrier Multiplexing
 - Software Engineering
 - Asynchronous Transfer Mode
 - xDSL Local Access
 - Wireless Local Loop
 - Enhanced Voice Communications
 - Telecomm Network Systems
 - Wireless Data
 - Digital System Design
 - Telecom Management Network (TMN)
 - Computer Communications
 - Cellular Communications
 - Telecom Standards
 - Voice/Data Networking
 - Technical Regulatory Issues
 - Voice over IP
 - Operations, Administration, Maintenance & Provisioning (OAM&P)

EDUCATION

Ph.D.	Computer Science	University of Illinois	1970
M.S.	Electrical Engineering	University of Illinois	1967
B.S.	Electrical Engineering, (Highest Honors)	Michigan State University	1965

C. R. BAUGH AND ASSOCIATES, Bellevue, WA**1991 - Present***President*

Founder of telecommunications technology consulting firm.

- Built multiple client business in advanced telecommunications technology for specifying, designing and developing innovative products and services that assisted in business success.
- Consulted in the areas of broadband local access, intelligent network services, PCS, broadband ISDN, network management, cellular, wireless local loop, voice over IP networks, expert witness, and telephony over coax cable.
- Testified as an expert witness in patent litigation – testified in jury trial, submitted experts reports, been deposed
- Founded or part of initial team in more than half a dozen start up telecommunication companies – smart antennas, voice over IP, intelligent network services, point-to-multipoint radio, wireless data
- Contributed to telecommunications standards development with leadership roles and contributing roles in various standards organizations

TEKNEKRON COMMUNICATIONS SYSTEMS, INC., Bellevue, WA**1990 - 1991***Director of Engineering*

Responsible for creating and managing the Bellevue Development Center and projects in the Center for Teknekron (\$50M high technology product development company).

- Managed an \$8M network management system development contract for a major long distance carrier. Delivered system definition, software specification and product under adverse conditions.
- Built 18 member software engineering team in six months, concurrently establishing software engineering methodology and environment for object oriented and windows technologies.

BOEING ELECTRONICS, Seattle, WA**1987 - 1990***Chief Engineer - Telecommunications Group*

Reported to VP of Engineering and headed the engineering organization. Developed the strategic product plan including specification, system engineering and development in a start-up business unit to design and manufacture products for telephone companies. (\$10M budget and 40 staff) Business unit terminated in 1989.

- Shipped high volume innovative data communications product while using concurrent engineering to reduce development time by 25%. Product innovations significantly reduced operating costs.
- Catalyst for teaming with marketing and advance technology groups to specify wireless local loop radio telephone systems with performance and price advantages four times better than emerging competition.
- Drove the innovation of high speed data communications product line that was network powered and used standard ISDN loop wire technologies.
- Formed an award-winning blended team of aerospace, telecommunications, hardware and software engineers. Highly recognized for engineering effectiveness.
- Stimulated numerous quality improvement initiatives with significant results in engineering productivity and product quality.

RACAL-MILGO INC., Fort Lauderdale, FL**1981-1987***Senior Director - Applied Research & Technology Management**Senior Director - Communications Network Management Engineering**Director - Applied Research & Technology Management*

Accountable to senior management for new product technology, product development, and technology management for software and hardware based data communications products at Racal-Milgo (\$300M subsidiary of Racal Electronics Plc., \$3B in 1990.).

- Initiated innovations in voice compression, video compression, asynchronous transfer mode data communications, spread spectrum data communications, security, ISDN, and telecommunications software. Several products resulted from these initiatives.
- Led the software development team (80 staff) for network management products requiring transition to new software architecture using Unix and C.
- Directed the technical strategy for involvement in international standards organizations. Led the firm's technical regulatory affairs with the FCC.
- Co-led with marketing the first corporate strategic plan. Participated with New Business Development in assessment of new ventures.
- Managed the custom integrated circuit design of the signal processing chips that were the heart of the modem product line. The product line generated over \$1.5B in revenue over its life cycle.

AT&T BELL LABORATORIES, Holmdel, NJ**1970 - 1981***Supervisor - Private Branch Exchange (PBX) Software Development**Member of Technical Staff - Digital Communications Research*

Diverse assignments in both advanced technology and product development for special business telephone communications systems.

- Defined the architecture and led the design and development of the AT&T System 75 PBX maintenance software architecture and implementation.
- Led development team in Electronic Switching System Centrex attendant console. Managed the software development of Management Information System products for Automatic Call Distributor Systems. Both products successfully marketed.
- Directed the advanced technology group to innovate a seamless, voice/data PBX network with remote access to features.
- Invented technology in digital fault detection techniques, digital encoding of voice for telephony, digital signal processing of speech signals, and software tools for digital signal processing.

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Publications/Patents

- 23 publications in the areas of digital communications including local area networks, digital switching, digital signal processing, integrated circuit design, digital voice and imaging, real-time software, application software for signal processing and operations research.
- 15 patents
- Most significant patents: Fundamental patent covering ISDN. Fundamental integer multiplication patent used in digital signal processing circuits that have shipped in volumes of 100's of millions of units.
- UCLA Short Course - Cellular, PCS and Wireless Data (1992-2000)

Professional Society Contributions and Awards

- Fellow of IEEE (1993)
 - IEEE Outstanding Service Award (1985)
 - IEEE Centennial Award (1984)
 - IEEE Communications Society
- Various leadership roles in technical committees and conference organizations